

Permit No.: AK-002295-1
Application No.: AK-002295-1

United States Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, Washington 98101

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, 33 U.S.C. § 1251 et seq., as amended by the Water Quality Act of 1987, P.L. 100-4, the "Act,"

The City and Borough of Juneau
Mendenhall Wastewater Treatment Facility
2009 Radcliffe Road
Juneau, Alaska 99801

is authorized to discharge from a municipal wastewater treatment facility to receiving waters named the Mendenhall River, at the following location:

<u>Outfall Serial Number</u>	<u>Latitude</u>	<u>Longitude</u>
001	58E 21' 48" N	134E 20' 08" W

in accordance with discharge point(s), effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective

This permit and the authorization to discharge shall expire at midnight,

Signed this day of

Randall F. Smith

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August 15, 2000

Director, Office of Water, Region 10
U.S. Environmental Protection Agency

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I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

A. Effluent Limitations.

During the effective period of this permit, the permittee is authorized to discharge wastewater to the Mendenhall River from Outfall 001 provided the discharge meets the limitations and monitoring requirements set forth herein. This permit does not authorize the discharge of any waste streams, including spills and other unintentional or non-routine discharges of pollutants, that are not part of the normal operation of the facility as disclosed in the permit application.

1. The pH shall not be less than 6.5 nor greater than 8.5.
2. There shall be no discharge of floating solids or visible foam, or oily wastes which produce a sheen on the surface of the receiving water.
3. Collected screenings grit, solid sludge, filtered backwash or other pollutants removed in the course of treatment or control of wastewater shall be disposed of in a manner such as to prevent any pollution from such material from entering surface water or wetlands.
4. The following limits shall apply:

Effluent Characteristics	Unit of Measure	Monthly Average	Weekly Average	Daily Maximum
Flow	MGD	---	---	4.9
Biochemical Oxygen Demand, BOD ₅	mg/l lbs/day	30 1226	45 1839	60 2452
Total Suspended Solids, TSS	mg/l lbs/day	30 1226	45 1839	60 2452
Fecal Coliform ¹	#/100 ml	200 ²	400	400 ³
Total Chlorine Residual ^{1,4}	mg/l lbs/day	--	--	0.002 0.082

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Effluent Characteristics	Unit of Measure	Monthly Average	Weekly Average	Daily Maximum
Total Ammonia as N	mg/L lbs/day	26.4 1079	--	39.7 1622
Copper (TR) ⁴	Fg/L lbs/day	8.36 0.342	--	20.1 0.858
Lead (TR) ⁴	Fg/L lbs/day	5.5 0.225	--	11.0 0.450
Silver (TR) ⁴	Fg/L lbs/day	0.87 0.036	--	1.75 0.072
Zinc (TR) ⁴	Fg/L lbs/day	71.4 2.92	--	149 6.09
¹ Reporting is required within 24 hours if the maximum daily limit is violated. ² Based on the geometric mean of 5 samples taken over 30 separate days during the month. ³ No more than 10 percent of the samples may exceed a daily maximum of 400 FC/100 ml. ⁴ If an analytical value is less than the method detection limit (MDL), the permittee shall report "< [numerical method detection limit]" on the DMR. For example, if the laboratory reports "not detected" for a sample, and states that the MDL is "5 µg/L" then the permittee shall report "< 5 µg/L" on the DMR. All other values shall be reported and used in calculating averages. For minimum levels and interim minimum levels, see section I.A.7. For the purposes of calculating averages, any value below the MDL may be set equal to zero.				

5. The effluent shall be dechlorinated prior to discharge into the receiving waters.
6. Percent removal requirements for BOD₅ and TSS are as follows: for any month, the monthly average effluent load shall not exceed 15 percent of the monthly average influent load.

Percent removal of BOD₅ and TSS shall be reported on the discharge monitoring reports (DMRs). The monthly average percent removal shall be calculated from the arithmetic mean of the effluent values for that month.

7. Method Detection Limits (MDLs), Interim Minimum Levels (IMLs), and Minimum Levels (MLs).

- a. The effluent limits for total residual chlorine are near or below detection limits using EPA-approved analytical methods. EPA will use the minimum level¹ (ML) as the compliance evaluation level for total residual chlorine.

Parameter	ML, mg/L
Total Residual Chlorine	0.040

- b. The effluent limits for copper, lead, silver, and zinc are near or below detection limits using EPA-approved analytical methods. EPA will use the ML or IML as the compliance evaluation level for these parameters.

Parameter	ML, Fg/L	IML, Fg/L
Copper	5	----
Lead	5	----
Silver	----	0.3
Zinc	5	----

B. Effluent Monitoring Requirements.

Beginning on the effective date of this permit, the following monitoring requirements shall apply.

1. Effluent Monitoring Requirements.

¹ See Part I.H., "Definitions" for definitions of minimum and interim minimum levels.

Effluent Parameter	Unit of Measure	Sample Location ¹	Sampling Frequency	Sample Type
Total Flow	MGD	Effluent	Continuous	Recording
BOD ₅ ¹	mg/L & lbs/day	Influent & Effluent	1/week	24-hour Composite
TSS ¹	mg/L & lbs/day	Influent & Effluent	1/week	24-hour Composite
Fecal Coliform	#/100 ml	Effluent	2 days/week	Grab
pH	standard units	Effluent	5 days/week	Grab
Temperature	EC	Effluent	5 days/week	Grab
Total Residual Chlorine	mg/L	Effluent	5 days/week	Grab
Total Ammonia as N	mg/L	Effluent	1/week	24-hour Composite
Turbidity	NTU	Effluent	1/quarter ²	
Dissolved Oxygen (DO)	mg/L	Effluent	1/quarter ²	Grab
Cyanide	Fg/L	Effluent	As specified in Part I.D.3.	24-hour Composite
Copper (TR)	Fg/L	Effluent	1/month	24-hour Composite
Lead (TR)	Fg/L	Effluent	1/month	24-hour Composite
Silver (TR)	Fg/L	Effluent	1/month	24-hour Composite
Zinc (TR)	Fg/L	Effluent	1/month	24-hour Composite
Hardness, as CaCO ₃	mg/L	Effluent	whenever metals are sampled	24-hour Composite
Alkalinity, as CaCO ₃	mg/L	Effluent	whenever metals are sampled	24-hour Composite
Whole Effluent Toxicity (WET)	TU _c	Effluent	2/year ³	24-hour Composite

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Effluent Parameter	Unit of Measure	Sample Location ¹	Sampling Frequency	Sample Type
1	Influent and effluent samples shall be collected during the same 24-hour period. Effluent samples shall be collected after the last treatment unit prior to discharge.			
2	Sampling shall continue until a total of 12 samples have been collected.			
3	Samples shall be collected once during July 1- January 31, and once during February 1 - June 30.			

2. Whole Effluent Toxicity Testing. The permittee shall conduct toxicity tests two times a year, once during the period July 1 - January 31, and once during the period February 1 - June 30, on 24-hour composite effluent samples as described below.
 - a. Organisms and protocols
 - (1) The permittee shall conduct static-renewal tests with the cladoceran, *Ceriodaphnia dubia* survival and reproduction test and the fathead minnow, *Pimephales promelas* larval survival and growth test.
 - (2) The presence of chronic toxicity shall be estimated as specified in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Third Edition, EPA-600-4-91-002, July 1994.
 - b. Results shall be reported in TUc (chronic toxic units). $TUc = 100/NOEC$ (in percent effluent).
 - c. Chronic toxicity testing requirements are triggered when the NOEC exceeds 10.0 TUc (10 percent effluent concentration). When chronic toxicity testing requirements are triggered, the permittee shall comply with the requirements set out in paragraphs g. and h. below.
 - d. Quality assurance
 - (1) A series of five dilutions and a control shall be tested. The series shall include the receiving water concentration of **10.0 percent effluent concentration**.

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- (2) Concurrent testing with reference toxicants shall also be conducted if organisms are not cultured in-house. Otherwise, monthly testing with reference toxicants is sufficient. Reference toxicants shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration and type).
 - (3) If the effluent tests do not meet all test acceptability criteria as specified in the manual, then the permittee must re-sample and re-test as soon as possible.
 - (4) Control and dilution water shall be synthetic, moderately hard laboratory water, as described in the manual. If the dilution water used is different from the culture water, a second control, using culture water shall also be used. Receiving water may be used as control and dilution water upon notification of EPA. In no case shall water that has not met test acceptability criteria be used as dilution water.
 - (5) Fresh samples shall be obtained for the renewal of biomonitoring dilution. The effluent data shall be obtained from the composite sample used for day 1 toxicity tests. Test samples for days 1, 3, and 5 will be analyzed for alkalinity, hardness, pH, temperature, dissolved oxygen, total ammonia, and total residual chlorine.
- e. Preparation of initial investigation toxicity reduction evaluation (TRE) plan
- (1) The permittee shall submit to EPA a copy of the permittee's initial investigation TRE workplan within **180 days of the effective date of this permit**. This plan shall describe the steps the permittee intends to follow in the event that toxicity, as defined in paragraph 2.d. above, is detected, and should include at a minimum:

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- (a) a description of the investigation and evaluation techniques that would be used to identify potential causes/sources of toxicity, effluent variability, treatment system efficiency;
- (b) a description of the facility's method of maximizing in-house treatment efficiency, good housekeeping practices, and a list of all chemicals used in operation of the facility; and
- (c) a description of who will conduct it if a toxicity identification evaluation (TIE) is necessary.

f. Accelerated testing

- (1) If chronic toxicity testing requirements as defined in paragraph d. above are triggered, the permittee shall implement the initial investigation workplan. If implementation of the initial investigation workplan indicates the source of toxicity (for instance, a temporary plant upset), then only one additional test is necessary. If toxicity is detected in this test, then paragraph g.(2) shall apply.
- (2) If chronic toxicity testing requirements as defined in paragraph d. above are triggered, then the permittee shall conduct six more tests, bi-weekly (every two weeks), over a twelve-week period. Testing shall commence within two weeks of receipt of the sample results of the exceedance.

g. Toxicity Reduction Evaluation and Toxicity Identification Evaluation

- (1) If chronic toxicity testing requirements as defined in paragraph d. are triggered in any of the six additional tests required under g.(1), then, in accordance with the permittee's initial investigation workplan and EPA manual EPA 833 B-99-002 (Toxicity Reduction Evaluation

Guidance for Municipal Wastewater Treatment Plants), the permittee shall initiate a TRE within fifteen (15) days of receipt of the sample results of the exceedance. The permittee will develop as expeditiously as possible a more detailed TRE workplan, which includes:

- (a) further actions to investigate and identify the cause of toxicity;
 - (b) actions the permittee will take to mitigate the impact of the discharge and to prevent the recurrence of toxicity; and
 - (c) a schedule for these actions.
- (2) The permittee may initiate a TIE as part of the overall TRE process described in the EPA acute and chronic TIE manuals EPA/600/6-91/005F (Phase I), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III).
 - (3) If none of the six tests required under paragraph g.(1) above indicates toxicity, then the permittee may return to the normal testing frequency.
 - (4) If a TIE is initiated prior to completion of the accelerated testing, the accelerated testing schedule may be terminated, or used as necessary in performing the TIE.

h. Reporting

- (1) The permittee shall submit the results of the toxicity tests, including any accelerated testing conducted during the month, in TUs with the discharge monitoring reports (DMR) for the month in which the test is conducted. If an initial investigation indicates the source of toxicity and accelerated testing is unnecessary, pursuant to paragraph g.(2), then those results shall also be submitted with the DMR for the quarter in which the investigation occurred.

- (2) The full report shall be submitted by the end of the second month in which the DMR is submitted.
- (3) The full report shall consist of the results, the dates of sample collection and initiation of each toxicity test, the triggers as defined in paragraph d. above, the type of activity occurring, the flow rate at the time of sample collection, and the chemical parameter monitoring required for the outfall(s) as defined in the permit.
- (4) Test results for chronic tests shall also be reported according to Chapter 10, "Report Preparation," of the manual and shall be attached to the DMR.

C. Receiving Water Monitoring.

1. Sampling and analysis of the Mendenhall Wastewater Treatment Facility effluent shall be conducted on the same days as the receiving water sampling for the same parameters that are sampled in the receiving water.
2. The following parameters shall be sampled:

Parameter	Receiving Water Sampling Frequency	Sample Type	Effluent Sampling Frequency
Flow, mgd	1/month, USGS station	---	Continuous
Fecal Coliform Bacteria, #/100/ml	1/month ¹	grab	2 days/week
Total Ammonia as N, mg/L	1/month ¹	24-hour composite	4 days/month ¹
Temperature, EC	1/month ¹	grab	5 days/month ¹
pH, standard units	1/month ¹	grab	5 days/week

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Parameter	Receiving Water Sampling Frequency	Sample Type	Effluent Sampling Frequency
Dissolved oxygen (DO), mg/L	1/quarter until 12 samples have been collected	grab	1/quarter until 12 samples have been collected
Turbidity, NTU	1/quarter until 12 samples have been collected	grab	1/quarter until 12 samples have been collected
Copper ² , Fg/L	1/quarter until 12 samples have been collected	24-hour composite	1/month
Lead ² , Fg/L	1/quarter until 12 samples have been collected	24-hour composite	1/month
Silver ² , Fg/L	1/quarter until 12 samples have been collected	24-hour composite	1/month
Zinc ² , Fg/L	1/quarter until 12 samples have been collected	24-hour composite	1/month
Hardness as CaCO ₃ , mg/L	whenever metals are sampled	24-hour composite	1/month
Alkalinity as CaCO ₃ , mg/L	whenever metals are sampled	24-hour composite	1/month
1 See paragraphs 6a. and 6b. below for monitoring frequency.			
2 These parameters shall be analyzed as total recoverable. See Part I.D.3. for method detection limits.			

3. Receiving water reports summarizing each sampling event shall be submitted to EPA and ADEC annually by September 15. Each report shall include results from the receiving water sampling as well as the daily effluent flow from the treatment plant on the day of sampling.
4. For pH the permittee shall use the test methods approved in Methods for Chemical Analysis of Water and Wastes, (EPA-600/4-79/020) or any other approved method in Table 1B of 40 CFR Part 136.
5. Sample Type and Location.

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- a. River composite samples shall consist of three grab samples, one from each side of the river and one from the middle. Fecal coliform samples shall be analyzed separately.
 - b. Fecal coliform shall be monitored both upstream and downstream of the outfall. All other parameters shall be monitored upstream of the outfall.
 - c. Fecal coliform bacteria shall be monitored just outside the down-river boundary of the mixing zone, and simultaneously or shortly beforehand at a distance of approximately 300 feet upriver from the discharge to determine background concentrations. Samples must be collected just prior to low tide.
 - d. All ambient samples shall be collected prior to low tide.
6. Sampling Frequency.
- a. Ammonia, pH, and temperature shall be monitored once per month during May, June, July, August, September and October and once during November - April for two years after the effective date of the permit until a total of 12 samples of each parameter has been obtained. Depending upon the results of the testing, additional monitoring may be required by EPA and ADEC.
 - b. Beginning with the effective date of the permit, fecal coliform shall be monitored once per month during May, June, July, August, September and October and twice during the winter. The winter samples shall be obtained as long as it is safe to do so. Based upon the results and approval of EPA and ADEC, after two years, the ambient fecal coliform monitoring may be reduced to twice per year. If the sampling frequency has been reduced, and the method of disinfection has been changed, monitoring must recommence as stated above.
7. Receiving Water Monitoring Stations and Low Flow Study.

- a. Within 90 days of the effective date of the permit, the permittee shall submit to EPA and ADEC a plan describing receiving water monitoring stations for this discharge.
 - b. Within 120 days of the effective date of this permit, the permittee shall develop and submit to EPA and ADEC a study plan for determining the actual 7Q10 flow at the outfall location.
 - c. Within 120 days of the approval by EPA and ADEC of the study plan, the permittee shall implement the study plan.
8. Outfall Location Signs. Within 90 days of the effective date of this permit, the permittee shall place a sign, or signs on the shoreline near the mixing zone and outfall line. The sign, or signs, shall:
- a. state that treated domestic wastewater is being discharged, the name and owner of the facility, and the approximate location and size of the mixing zone;
 - b. inform the public that certain activities, such as the harvesting of shellfish for raw consumption and contact recreation should not take place in the mixing zone; and
 - c. give a contact number for additional information.
9. Mixing Zone. The mixing zone for this discharge shall be 300 meters by 30 meters, centered on the diffuser. The allowable dilution based on this mixing zone is 10:1.

D. Pretreatment Program Requirements.

1. The permittee shall conduct an industrial survey utilizing EPA Region 10 procedures and submit results of the survey to EPA for review by **June 30, 2001**. By **January 31, 2001**, the permittee shall submit a

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report describing the progress made in conducting the industrial user survey.

2. The permittee shall submit its existing sewer use ordinance which establishes the city's legal authority to regulate industrial users to EPA **within 60 days from the effective date** of this permit.
3. Toxics Sampling:
 - a. The permittee shall sample influent, effluent and sludge once during the period from April 1 through October 31, and once during the period from November 1 through March 31 during the fourth year of the permit, for arsenic, cadmium, chromium, copper, cyanide, lead, mercury, nickel, silver, and zinc. At a minimum, sampling for influent and effluent should achieve the method detection limits specified as follows.
 - b. The permittee shall sample once, **within 180 days after the effective date** of this permit, influent, effluent, and sludge for total toxic organics.

Method Detection Limits	
Parameter	Method Detection Limit
Arsenic	2 µg/L
Cadmium	0.5 µg/L
Chromium	2 µg/L
Copper	1 µg/L
Cyanide	10 µg/L
Lead	0.7 µg/L
Mercury	0.2 µg/L
Nickel	5 µg/L

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Method Detection Limits	
Parameter	Method Detection Limit
Silver	0.5 µg/L
Zinc	5 µg/L

4. Sampling Locations, Sample Type, and Frequency: The permittee shall sample as described in the table below.

Table 2: Pretreatment Monitoring - Sample Types and Frequency		
Wastestream	Sample Type	Frequency
Influent	24-hour Composite ¹	3 days within a week (Mon - Fri)
Effluent	24-hour Composite ¹	3 days within a week (Mon - Fri)
Sludge	Grab	Once, during the same time period that influent and effluent samples are being taken
Total Toxic Organics	Grab	Once within 180 days of the effective date of this permit
¹ Influent and effluent samples for cyanide shall be collected and analyzed as required in paragraph 4.b. below.		

Note: To the extent that effluent sampling under this paragraph fulfills the sampling requirements under Part I.B.1. above, these results may be used to satisfy the requirements of that paragraph.

- a. Sampling Results: The analytical results for the influent and effluent samples shall be reported as total in mg/L. Analytical

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results for sludge shall be reported in mg/kg (dry weight).
Additionally, the permittee shall report the percent of solids in the sludge.

- b. Cyanide Monitoring: Influent and effluent sampling for cyanide shall be conducted as follows. Eight discrete grab samples shall be collected over a 24-hour-period (approximately 1 sample every 3 hours). Each grab sample shall be at least 100 ml. Each sample shall be checked for the presence of interferences (sulfides and chlorine) and any interferences must be removed prior to preserving and compositing (refer to *Standard Methods*, 4500-CN B). After testing and treating for chlorine and sulfides, the pH of each sample shall be adjusted, using sodium hydroxide, to 12.0 standard units. Each sample can then be composited into a larger container which has been chilled to 4 degrees Celsius to allow for one analysis for the day.
 - c. Daily influent and effluent composite samples shall be analyzed and reported separately from those of other sample days. Sample results shall be submitted to the Pretreatment Coordinator.
 - d. All samples shall be prepared, preserved, shipped, and analyzed in accordance with Methods specified in 40 CFR Pt. 136.
5. Results of Part I.D.3. shall be reported to EPA at the following address, as well as ADEC within 30 days of sampling: Pretreatment Coordinator, USEPA, Region 10, 1200 Sixth Avenue, OW-130, Seattle, Washington 98101.

E. Quality Assurance Project Plan.

- 1. The permittee shall develop a Quality Assurance Plan. The primary purpose of the Quality Assurance Plan shall be to assist in planning for the collection and analysis of samples in support of the permit and in explaining data anomalies when they occur.

2. Throughout all sample collection and analysis activities, the permittee shall use the EPA approved quality assurance, quality control, and chain-of-custody procedures described in EPA QA/G-5 *Guidance on Quality Assurance Project Plans*. This document is available as an Adobe Acrobat file at <http://www.epa.gov/r10earth/offices/oea/qaindex.htm>.
3. The Permittee must maintain this plan for a period of five years, and must make this plan available to the EPA upon request.
4. At a minimum the plan shall include the following: sampling techniques (field blanks, replicates, duplicates, control samples, etc); sampling preservation methods; sampling shipment procedures; instrument calibration procedures and preventive maintenance (frequency, standard, spare parts); qualification and training of personnel; analytical test method that will be used to achieve the method detection limits in Part I.A.7, I.A. 8, and I.D.3.; and analytical methods (including quality control checks, quantification/detection levels).
5. Name(s), address(es) and telephone number(s) of the laboratories, used by or proposed to be used by the permittee, shall be specified in the Quality Assurance Plan.
6. The permittee may obtain copies of all references cited in this part of the permit from the following address:

Quality and Data Management Program
Office of Environmental Assessment
U.S. EPA, Region 10
1200 6th Avenue, OEA-095
Seattle, Washington 98101.

F. Design Criteria Requirements.

The design criteria for the permitted facility are as follows:

Design Criteria		
Criteria	Value	Units
Maximum Flow	4.9	mgd
Influent BOD ₅ Loading	7356	lbs/day
Influent TSS Loading	8990	lbs/day

1. Each month, the permittee shall compute an annual average value for flow, and BOD₅ and TSS loading entering the facility based on the previous twelve months data or all data available, whichever is less. If the facility performs plant upgrades that affect design criteria listed in the table, only data collected after the upgrade should be used in determining the annual average value. When the average annual values exceed 85% of the design criteria values listed in the table for three months in a row, the permittee shall develop a facility plan and schedule within 18 months from the date of the third consecutive exceedance of 85 percent of the design criteria values listed above. The plan must include the permittee's strategy for continuing to maintain compliance with effluent limits and will be made available to the Director or authorized representative upon request.
2. The permittee shall notify ADEC whenever there is an increase of more than 10 percent of annual average flow based on the previous twelve months of data.

G. Operation and Maintenance Plan Review.

1. **Within 180 days of the effective date** of the permit, the permittee shall review its operation and maintenance (O&M) plan and ensure that it includes appropriate best management practices (BMPs); the plan must be reviewed annually thereafter. BMPs include measures which prevent or minimize the potential for the release of pollutants to the Mendenhall River. The Plan shall be retained on site and made available to EPA and ADEC upon request.

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2. The permittee shall develop a description of pollution prevention measures and controls appropriate for the facility. The appropriateness and priorities of controls in the Plan shall reflect identified potential sources of pollutants at the facility. The description of BMPs shall address, to the extent practicable, the following minimum components: spill prevention and control; optimization of chemical usage; preventive maintenance program; minimization of pollutant inputs from industrial users; research, development and implementation of a public information and education program to control the introduction of household hazardous materials to the sewer system; and water conservation.

H. Definitions.

1. "Ambient monitoring" means receiving water monitoring.
2. "Annual Average" means the sum of all values reported in a twelve month period divided by the number of values.
3. "Average monthly discharge limitation" means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month. For fecal coliform bacteria, the average monthly discharge shall be calculated as a geometric mean.
4. "Average weekly discharge limitation" means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week. For fecal coliform bacteria, the average weekly discharge shall be calculated as a geometric mean.
5. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
6. "Chronic toxicity" measures a sublethal effect (e.g., reduced growth, reproduction) in an effluent or ambient waters compared to that of the control organisms.

7. “Daily discharge” means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day.
8. “Geometric mean” is the n th root of the product of the values in a list.
Geometric mean = $\sqrt[n]{k_1 * k_2 * \dots * k_n}$, where n = the number of fecal coliform values and k = the coliform value. Where the fecal coliform value is zero, k shall be set equal to 1.
9. A “grab” sample, for monitoring requirements, is a single “dip and take” sample or measurement taken at a specific time or over as short a period of time at a representative point anywhere in wastewater treatment or biosolids land application processes, as is feasible.
10. A “grab-composite” means a sample that consists of a minimum of 3 aliquots over an 8-hour period.
11. “Industrial user” or non-domestic user, means a source of indirect discharge regulated under section 307(b), (c), or (d) of the Act.
12. “Inhibition concentration, IC”, means a point estimate of the toxicant concentration that causes a given percent reduction (p) in a non-quantal biological measurement (e.g., reproduction or growth) calculated from a continuous model (the EPA Interpolation Method). The effective concentration, EC, is a point estimate of the toxicant concentration that would cause a given percent reduction (p) in quantal biological measurement (e.g., larval development, survival) calculated from a continuous model (e.g., Probit).

13. “Interim Minimum Level” is calculated when a method-specified ML does not exist. It is equal to 3.18 times the method-specified method detection limit rounded to the nearest multiple of 1, 2, 5, 10, 20, 50, etc.
14. “Method Detection Limit (MDL)” is the minimum concentration of an analyte that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero as determined by a specific laboratory method (40 CFR Part 136).
15. “Minimum Level (ML)” is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method-specified weights, volumes and processing steps have been followed.
16. “Maximum daily discharge limitation” means the highest allowable “daily discharge.”
17. “No Observed Effect Concentration” (NOEC) is the highest concentration of toxicant to which organisms are exposed in a full life-cycle or partial life-cycle test, that causes no observable adverse effects on the test organisms (i.e., the highest concentration of toxicant in which the values for the observed responses are not statistically significantly different from the controls).
18. “Pollutant” for the purposes of this permit is an organic substance, an inorganic substance, a combination of organic and inorganic substances, or pathogenic organisms that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food-chain, could, on the basis of information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction), or physical deformations in either organisms or offspring of the organisms.

19. “Receiving water concentration (RWC)” is the concentration of pollutant, including toxicity, at the edge of the mixing zone. For whole effluent toxicity, RWC, percent effluent concentration, is equal to $1/(\text{minimum dilution}) \times 100$.
20. “Severe property damage” means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
21. A “24-hour composite” sample shall mean a flow-proportioned mixture of not less than 8 discrete aliquots. Each aliquot shall be a grab sample of not less than 100 ml and shall be collected and stored in accordance with procedures prescribed in the most recent edition of *Standard Methods for the Examination of Water and Wastewater*.
22. “Upset” means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

II. MONITORING, RECORDING AND REPORTING REQUIREMENTS

A. Representative Sampling.

1. Final effluent samples taken in compliance with the monitoring requirements established under Part I shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and

measurements shall be representative of the volume and nature of the monitored discharge.

2. Influent samples shall be collected at the headworks of the treatment plant prior to combination with any recirculation flows.
- B. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.
- C. Reporting of Monitoring Results. Monitoring results conducted in compliance with Parts I.A.–C. of this permit shall be summarized each month on the DMR form (EPA No. 3320-1). The reports shall be submitted monthly and are to be postmarked by the 10th day of the following month. Legible copies of these, and all other reports, shall be signed and certified in accordance with the requirements of Part IV.J., Signatory Requirements, and submitted to the Director, Office of Water and ADEC at the following addresses:
- original to: United States Environmental Protection Agency (EPA)
Region 10
1200 Sixth Avenue, OW-133
Seattle, Washington 98101,
- copy to: Alaska Department of Environmental Conservation
(ADEC)
Division of Air and Water Quality
410 Willoughby Avenue, Suite 105
Juneau, Alaska 99801
- D. Additional Monitoring by the Permittee. If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR, or Biosolids Report. Such increased frequency shall also be indicated.
- E. Records Contents. Records of monitoring information shall include the following:

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the date, exact place, and time of sampling or measurements;
the individual(s) who performed the sampling or measurements;
the date(s) analyses were performed;

the individual(s) who performed the analyses;
the analytical techniques or methods used; and
the results of such analyses.

- F. Retention of Records. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time. A copy of this NPDES permit must be maintained on-site during the duration of activity at the permitted location. Data collected on-site and copies of DMRs must be maintained on-site for three years, after which they may be stored off-site.
- G. Twenty-four Hour Notice of Noncompliance Reporting.
1. The following occurrences of noncompliance shall be reported by telephone within 24 hours from the time the permittee becomes aware of the circumstances:
 - a. any noncompliance which may endanger health or the environment;
 - b. any unanticipated bypass which exceeds any effluent limitation in the permit (See Part III.H., Bypass of Treatment Facilities.);
 - c. any upset which exceeds any effluent limitation in the permit (See Part III.H., Upset Conditions.); or
 - d. violation of a maximum daily discharge limitation for those toxic or hazardous pollutants identified in Part I.A.4. of the permit to be reported within 24 hours.

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2. The permittee shall report any noncompliance, including transportation accidents and spills which may seriously endanger health or the environment as soon as possible, but no later than 24 hours from the time the permittee first became aware of the circumstances. The report shall be made to the EPA, Region 10, at (206) 553-1846 and to ADEC.
 3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:
 - a. a description of the noncompliance and its cause;
 - b. the period of noncompliance, including exact dates and times;
 - c. the estimated time noncompliance is expected to continue if it has not been corrected; and
 - d. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
 4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the NPDES Compliance Unit in Seattle, Washington, by phone, (206) 553-1846.
 5. Reports shall be submitted to the addresses in Part II.C., Reporting of Monitoring Results.
- H. Other Noncompliance Reporting. Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for Part II.C. are submitted. The reports shall contain the information listed in Part III.H.2.
- I. Inspection and Entry.
1. The permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the

Administrator), upon the presentation of credentials and other documents as may be required by law, to:

- a. enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
 - b. have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c. inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit including, but not limited to, biosolids treatment, collection, storage facilities or area, transport vehicles and containers, and land application sites; and
 - d. sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location including, but not limited to, digested biosolids before dewatering, dewatered biosolids, biosolids transfer or staging areas, any ground or surface waters at the land application sites, or biosolids, soils, or vegetation on the land application sites.
2. The permittee shall make the necessary arrangements with the landowner or leaseholder to obtain permission or clearance, so that the Director, or authorized representative thereof, upon the presentation of credentials and other documents as may be required by law, will be permitted to enter without delay for the purposes of performing their responsibilities.

III. COMPLIANCE RESPONSIBILITIES

- A. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall

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give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

B. Penalties for Violations of Permit Conditions.

1. Civil and Administrative Penalties. Any person who violates a permit condition implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act shall be subject to a civil or administrative penalty, not to exceed the maximum amounts authorized by sections 309(d) and 309(g) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note).
2. Criminal Penalties.
 - a. Negligent Violations. Any person who negligently violates a permit condition implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act shall, upon conviction, be punished by a fine and/or imprisonment as specified in section 309(c)(1) of the Act.
 - b. Knowing Violations. Any person who knowingly violates a permit condition implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act shall, upon conviction, be punished by a fine and/or imprisonment as specified in section 309(c)(2) of the Act.
 - c. Knowing Endangerment. Any person who knowingly violates a permit condition implementing sections 301, 302, 303, 306, 307, 308, 318, or 405 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine and/or imprisonment as specified in section 309(c)(3) of the Act.
 - d. False Statements. Any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this Act or who knowingly

falsifies, tampers with, or renders inaccurate any monitoring device or method required to be maintained under this Act, shall, upon conviction, be punished by a fine and/or imprisonment as specified in section 309(c)(4) of the Act.

- e. Except as provided in permit conditions in Part III.G., Bypass of Treatment Facilities and Part III.H., Upset Conditions, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.
- C. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- D. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
- E. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
- F. Removed Substances. Collected screenings, grit, solids, biosolids, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters.
- G. Bypass of Treatment Facilities.
 - 1. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation.

These bypasses are not subject to the provisions of paragraphs 2 and 3 of this section.

2. Notice.

- a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
- b. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required under Part II.G., Twenty-four Hour Notice of Noncompliance Reporting.

3. Prohibition of Bypass.

- a. Bypass is prohibited and the Director may take enforcement action against a permittee for a bypass, unless:
 - (1) the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - (2) there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - (3) the permittee submitted notices as required under paragraph 2 of this section.
- b. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph 3.a. of this section.

H. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 2 of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
2. Conditions necessary for a demonstration of upset. a permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - a. An upset occurred and that the permittee can identify the cause(s) of the upset;
 - b. The permitted facility was at the time being properly operated;
 - c. The permittee submitted notice of the upset as required under Part II.H., Twenty-four Hour Notice of Noncompliance Reporting; and
 - d. The permittee complied with any remedial measures required under Part III.D., Duty to Mitigate.
3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

IV. GENERAL REQUIREMENTS

- A. Notice of New Introduction of Pollutants. The permittee shall provide adequate notice to the Director, Office of Water, of the following.
 1. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to sections 301 or 306 of the Act if it were directly discharging those pollutants; and

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2. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.
 3. For the purposes of this section, adequate notice shall include the following information:
 - a. the quality and quantity of effluent to be introduced into such treatment works; and
 - b. any anticipated impact of the change on the quantity or quality of effluent to be discharged from such publicly owned treatment works.
- B. Control of Certain Pollutants. Under no circumstances shall the permittee allow introduction of the following wastes into the waste treatment system.
1. Wastes which will create a fire or explosion hazard in the treatment works;
 2. Wastes which will cause corrosive structural damage to the treatment works, but in no case, wastes with a pH lower than 5.0, unless the works is designed to accommodate such wastes;
 3. Solid or viscous substances in amounts which cause obstructions to the flow in sewers, or interference with the proper operation of the treatment works;
 4. Wastewaters at a flow rate and/or pollutant discharge rate which is excessive over relatively short time periods so that there is a treatment process upset and subsequent loss of treatment efficiency; and
 5. Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge of such volume or strength as to cause interference in the treatment works.
- C. Requirements for Industrial Users. The permittee shall require any industrial user of these treatment works to comply with any applicable requirements of

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sections 204(b), 307, and 308 of the Act, including any requirements established under 40 CFR Part 403.

- D. Planned Changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are not subject to effluent limitations in the permit.
- E. Anticipated Noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- F. Permit Actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- G. Duty to Reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The application should be submitted at least **180 days before the expiration date of this permit**.
- H. Duty to Provide Information. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.
- I. Other Information. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts or information.
- J. Signatory Requirements. All applications, reports or information submitted to the Director shall be signed and certified.

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1. All permit applications shall be signed by either a principal executive officer or ranking elected official.
2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. the authorization is made in writing by a person described above and submitted to the Director, and
 - b. the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
3. If an authorization under paragraph IV.J.2. is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph IV.J.2. must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.
4. Any person signing a document under this section shall make the following certification.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I

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am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

- K. Availability of Reports. Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Director. As required by the Act, permit applications, permits and effluent data shall not be considered confidential.
- L. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under section 311 of the Act.
- M. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.
- N. Severability. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
- O. Transfers. This permit may be automatically transferred to a new permittee if:
1. the current permittee notifies the Director at least 30 days in advance of the proposed transfer date;
 2. the notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and
 3. the Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in Part IV.O.2. above.

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- P. State Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by section 510 of the Act.
- Q. Reopener Provision. This permit is subject to modification, revocation and reissuance, or termination at the request of any interested person (including the permittee) or upon EPA initiative. However, permits may only be modified, revoked or reissued, or terminated for the reasons specified in 40 CFR §122.62 or 122.64, and 40 CFR §124.5. This includes new information which was not available at the time of permit issuance and would have justified the application of different permit conditions at the time of issuance, including but not limited to future monitoring results. All requests for permit modification must be addressed to EPA in writing and shall contain facts or reasons supporting the request.